



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,501	10/16/2003	Robert Schade	0329.68516	9042

24978 7590 06/07/2005

GREER, BURNS & CRAIN  
300 S WACKER DR  
25TH FLOOR  
CHICAGO, IL 60606

EXAMINER
----------

SCHWARTZ, PAMELA R

ART UNIT	PAPER NUMBER
----------	--------------

1774

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/687,501.

Applicant(s)

SCHADE ET AL.

Examiner

Pamela R. Schwartz

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 28-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-39 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/16/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1774

1. Claims 28-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 13, 2005.
2. Claims 1-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear what is meant by the phrase used in the specification and claims, "polyvinyl alcohol-boric acid-polyvinyl alcohol bonds" and how these bonds are distinguished from those formed between polyvinyl alcohol and boric acid during cross-linking or coagulation. The examiner has considered applicants' specification and the prior art and has found no basis to distinguish the bonds formed by applicants from those formed in the prior art.

Applicants have not set forth what type of bonding occurs in a way that distinguishes over the prior art bonding between polyvinyl alcohol and boric acid. Therefore, for purposes of this examination, applicants' bonding will be treated as the same as the cross-linking and coagulation that is conventional in the art.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

Art Unit: 1774

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,808,767 taken alone, or in view of Moore et al. (4,880,498). Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims recite an ink jet recording medium comprising an ink receptive coating of polyvinyl alcohol, boric acid, glyoxal, and cationic fixing agent in proportions consistent with the instant claims. As stated above, the conventional bonding that occurs with these materials is considered to be the same type of bonding achieved by the instant claims and is considered to inherently form the sieve or screen structure instantly claimed. The coat weight of the instant claims is slightly lower than that of the patent but is not patentably distinct from the prior art range. One of ordinary skill in the art would have found it obvious to determine the specific weight of the coating in order to achieve desired properties such as smoothness. Limitations of the instant claims concerning the base sheet would have been obvious to one of ordinary skill in the art. The instantly claimed parameters are all known parameters in the papermaking arts.

Moore et al. disclose many of the conventional paper parameters instantly claimed. In col. 5, Moore et al. disclose inclusion of chemical pulp and common paper additives such as rosin and ketene dimer sizes (see col. 5, lines 33-68). In Example 3, inclusion of a 50/50 mixture of hardwood and softwood is taught. Wet strength agents

Art Unit: 1774

and cationic additives are taught at col. 1, lines 10-20 as well as throughout as dry strength agents. Determination of proportions of these conventionally used materials would have been obvious to one of ordinary skill in the papermaking art. Paper machine broke is the waste from the papermaking machine and it is conventional and obvious to recycle this material into the papermaking process. Moore et al. disclose in example 3, a basis weight of 70 pounds which would be within applicants' claimed ranges if based upon a ream (3300 sq ft). Finally, determination of the basis weight of the paper would have been based upon its intended use and the basis weights instantly claimed are conventional for ink jet recording material (see Tokunaga et al., cited herein, to support this).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Riou et al. (4,877,686). The reference discloses a recording sheet for ink jet recording which may have a paper support (see col. 4, lines 31-39). The sheet has a coating of the reaction product of polyvinyl alcohol and boric acid which gels or coagulates the polyvinyl alcohol in order to have a barrier effect on the surface of the paper (see col. 2,

line 41 to col. 3, line 8). This is considered to be a three dimensional porous coating having polyvinyl alcohol-boric acid-polyvinyl alcohol bonds and forming a screen or sieve for holding the pigment or colorant. The reference specifically states that the barrier effect makes it possible to fix the ink droplet as soon as it arrives on the surface of the paper. The boric acid is considered to be an immobilizer as recited by applicants' claim 2. A pigment may be present (see col. 4, lines 13-30).

5. Claims 1, 2 and 4-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riou et al. (4, 877,686). See the explanation set forth above. In addition, it would have been obvious to one of ordinary skill in the art to include a cationic mordant in any ink receptive layer in order to facilitate dye fixation in the layer and to determine the quantity necessary to perform this function. Determination of the ratio of polyvinyl alcohol to boric acid in order to obtain a desired amount of gelling or coagulation would have been obvious to one of ordinary skill in the art. The reference discloses pigment and that binder is present within 10 to 100% by weight relative to the amount of filler (see col. 4, lines 20-25).

6. Claims 1 and 17-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riou et al. (4, 877,686) as set forth above and further in view of Moore et al. (4,880,498).

Moore et al. disclose many of the conventional paper parameters instantly claimed. In col. 5, Moore et al. disclose inclusion of chemical pulp and common paper additives such as rosin and ketene dimer sizes (see col. 5, lines 33-68). In Example 3, inclusion of a 50/50 mixture of hardwood and softwood is taught. Wet strength agents

Art Unit: 1774

and cationic additives are taught at col. 1, lines 10-20 as well as throughout as dry strength agents. Determination of proportions of these conventionally used materials would have been obvious to one of ordinary skill in the papermaking art. Paper machine broke is the waste from the papermaking machine and it is conventional and obvious to recycle this material into the papermaking process. Moore et al. disclose in example 3, a basis weight of 70 pounds which would be within applicants' claimed ranges if based upon a ream (3300 sq ft). Finally, determination of the basis weight of the paper would have been based upon its intended use and the basis weights instantly claimed are conventional for ink jet recording material (see Tokunaga et al., cited herein, to support this).

It would have been obvious to one of ordinary skill in the art to include a conventional paper as the paper support disclosed by the primary reference for its concomitant function therein.

7. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Tokunaga et al. (6,403,162). The reference discloses that non-porous supports are preferred. Therefore, the reference includes porous supports (see col. 8, lines 50-51). The reference discloses an ink jet recording material including a coating from a silica dispersion (see the abstract). A cationic polymer is included in the coating (see col. 4, line 53 to col. 6, line 9). The cationic polymer may be used in amounts of 1 to 20% based on the amount of silica. Hydrophilic binder, which may be polyvinyl alcohol is also included (see col. 6, lines 44-64). the hydrophilic binder is used in amounts preferably of 50% or less based upon the amount of silica (col. 7, lines 3-8). Hardening

Art Unit: 1774

agents which may be added include boric acid, epoxy and zirconium, alone, or in combination, in amounts of 0.01 to 40% based on the amount of binder in the layer. A fixing agent may also be present (see col. 7, lines 20-52). While the reference does not recite glyoxal as a hardening agent it is a known equivalent for this purpose in the art and would have been obvious to include in lieu of one or more of the other hardening agents. In light of the disclosure the include one or more of these agents, it would have been obvious to one of ordinary skill in the art to include them in any ratio within the overall disclosed range. Once the binder has been hardened, the layer is considered to meet the language of claim 1 concerning formation of a three dimensional porous coating comprising a reaction product principally having polyvinyl alcohol-boric acid-polyvinyl alcohol bonds and forming a sieve or screen for holding the ink colorant on the surface while permitting the ink carrier to penetrate through.

8. Claims 1 and 17-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Tokunaga et al. (6,403,162) as set forth above and further in view of Moore et al. (4,880,498).

Moore et al. disclose many of the conventional paper parameters instantly claimed. In col. 5, Moore et al. disclose inclusion of chemical pulp and common paper additives such as rosin and ketene dimer sizes (see col. 5, lines 33-68). In Example 3, inclusion of a 50/50 mixture of hardwood and softwood is taught. Wet strength agents and cationic additives are taught at col. 1, lines 10-20 as well as throughout as dry strength agents. Determination of proportions of these conventionally used materials would have been obvious to one of ordinary skill in the papermaking art. Paper



machine broke is the waste from the papermaking machine and it is conventional and obvious to recycle this material into the papermaking process. Moore et al. disclose in example 3, a basis weight of 70 pounds which would be within applicants' claimed ranges if based upon a ream (3300 sq ft). Finally, determination of the basis weight of the paper would have been based upon its intended use and the basis weights instantly claimed are conventional for ink jet recording material (see Tokunaga et al., cited herein, to support this).

It would have been obvious to one of ordinary skill in the art to include a conventional paper as a paper support for the primary reference since the disclosure of the primary reference permits porous supports and paper is the most commonly used porous support material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela Schwartz whose telephone number is (571) 272-1528.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

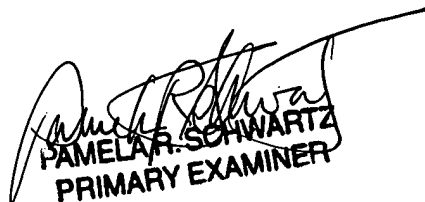
Application/Control Number: 10/687,501

Page 9

Art Unit: 1774

you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

PRSchwartz  
June 4, 2005



PAMELA R. SCHWARTZ  
PRIMARY EXAMINER